

Amendment to the Claims

Claim 1 (currently amended) An apparatus ~~useful for disposal of~~ removing hydrogen ~~in from~~ a fluid comprising hydrogen, ~~and residual amounts of~~ HF and aerosol electrolyte from a fluorine generator, the apparatus comprising:

- a) an electrolyte aerosol removal unit connected to the fluorine generator and containing ~~comprising~~ an aerosol removal composition wherein the electrolyte aerosol removal unit is adapted to allow the fluid to flow there through ~~therein through which the fluid is adapted to flow~~; and
- b) a catalytic unit connected to the electrolyte aerosol removal unit and comprising a catalytically activated combustion surface comprising one or more layers of wire screen, ~~the catalytic unit adapted to be positioned inside of a forced convection duct, the catalytic unit fluidly connected to the aerosol removal unit by a conduit, the catalytically activated combustion surface adapted to combust the hydrogen in an oxygen-containing stream, typically air or exhaust gases comprising air flowing through the forced convection duct.~~

Claim 2 (original) The apparatus of claim 1 wherein the apparatus is modular.

Claim 3 (original) The apparatus of claim 1 wherein the apparatus is portable.

Claim 4 (currently amended) The apparatus of claim 1 wherein the aerosol removal unit ~~component~~ is in bed form.

Claim 5 (original) The apparatus of claim 1 wherein the aerosol removal composition comprises a composition selected from the group consisting of soda lime, sodium fluoride, heated activated aluminum oxide, finely divided nickel, or combination thereof.

Claim 6 (currently amended) The apparatus of claim 1 wherein the ~~conduit that fluidly connects~~ the aerosol removal unit and the catalytic unit are connected by a conduit comprising ~~is selected from the group consisting of a nickel tube or and a nickel-lined tube.~~

Claim 7 (currently amended) The method ~~apparatus~~ of claim 16 ~~4~~ wherein the aerosol removal unit is maintained at a temperature of ranging from about 25°C to about 200°C.

Claims 8-9 (canceled)

Claim 10 (currently amended) The method ~~apparatus~~ of claim 16 ~~4~~ wherein the catalytically activated combustion surface is maintained ~~maintain~~ at a temperature of at least 70°C.

Claim 11 (currently amended) The method ~~apparatus~~ of claim 10 wherein the catalytically activated combustion surface is maintained ~~maintain~~ at a temperature of at least 200°C.

Claim 12 (currently amended) The apparatus of claim 1 wherein the aerosol removal unit and catalytic unit are positioned ~~position~~ at a distance from the ~~a~~ fluorine generator.

Claim 13 (currently amended) The apparatus of claim 1 wherein the aerosol removal unit and the catalytic unit are mounted on top of the ~~and within the footprint of~~ a fluorine generator.

Claim 14 (currently amended) The apparatus of claim 1 wherein the ~~catalytically activated combustion surface comprises one or more layers of wire screen,~~ wherein individual wires of the wire screen may be the same or different in composition, diameter, and orientation.

Claim 15 (currently amended) The apparatus of claim 1 14 wherein the wire screen ~~catalytically activated combustion surface~~ is a 10-ply layer of 95 percent platinum, 5 percent rhenium alloy screen.

Claim 16 (currently amended) A method for disposal of hydrogen in a fluid comprising hydrogen and residual amounts of HF and aerosol electrolyte from a fluorine generator, the method comprising ~~the steps of:~~

- a) flowing the fluid through an electrolyte aerosol removal unit ~~comprising containing~~ an aerosol removal composition, ~~wherein the fluid contacts to contact the fluid with~~ the aerosol removal composition and form ~~thereby forming~~ a hydrogen-rich fluid reduced in aerosol; and
- b) contacting the hydrogen-rich fluid reduced in aerosol with a catalytically activated combustion surface comprising one or more layers of wire screen positioned inside of a forced convection duct, while an oxygen containing stream ~~a gas comprising oxygen~~ flows through the forced convection duct, ~~thereby combusting to combust~~ the hydrogen with ~~oxygen in the oxygen-containing stream.~~

Claim 17 (canceled)

Claim 18 (currently amended) A method for generating fluorine and disposal of by-product hydrogen in a fluid comprising hydrogen, residual amounts of HF and aerosol electrolyte from a fluorine generator, the method comprising ~~the steps of:~~

- a) generating a fluorine-rich stream and a hydrogen-rich stream from the fluorine generator, the hydrogen-rich stream comprising minor amounts of electrolyte and hydrogen fluoride;
- b) purifying ~~routing~~ the fluorine-rich stream ~~to a cleanup train to~~ produce a purified fluorine stream; and
- e) treating ~~routing~~ the hydrogen-rich stream to reduce the ~~apparatus of claim 1,~~ thereby substantially reducing the aerosol content and combust ~~combusting~~ the hydrogen by:
 - flowing the hydrogen-rich stream through an electrolyte aerosol removal unit containing an aerosol removal composition to produce a hydrogen-rich fluid reduced in aerosol; and
 - contacting the hydrogen-rich fluid reduced in aerosol with a catalytically activated combustion surface comprising one or more layers of wire screen positioned inside of a forced convection duct, while an oxygen containing stream flows through the forced convection duct.

Claim 19 (new) The apparatus according to claim 1 wherein the oxygen-containing stream is air or exhaust gases.